

10/524720  
DT01 Rec'd PCT/PTC 16 FEB 2005

translation

CLAIMS

1. A fuel cell separator sandwiching from both sides via diffusion layers an anode and a cathode set against an electrolyte film, the separator being made of a mixture of a thermoplastic resin selected from among ethylene / vinyl acetate copolymers and ethylene / ethyl acrylate copolymers and at least one type of carbon particles selected from among Ketjen black, graphite and acetylene black, characterized in that the proportion of the thermoplastic resin in the mixture is 14 to 20wt% while the proportion of the carbon particles is 80 to 86wt%, and 3 to 20wt% of the carbon particles is Ketjen black.

2.

3.

4. (amended) A fuel cell separator sandwiching from both sides via diffusion layers an anode and a cathode set against an electrolyte film, the separator being made of a mixture of a thermoplastic resin selected from among ethylene / vinyl acetate copolymers and ethylene / ethyl acrylate copolymers, at least one type of carbon particles selected from among Ketjen black, graphite and acetylene black, and glass fiber or carbon fiber, characterized in that the proportion of the thermo-

plastic resin in the mixture is 14 to 20wt%, the proportion of the carbon particles is 70 to 83.5wt%, and the proportion of the glass or carbon fiber is 2.5 to 10 wt%.

5. (amended) A method for manufacturing a fuel cell separator, comprising the steps of:

obtaining a mixture by mixing a thermoplastic resin selected from among ethylene / vinyl acetate copolymers and ethylene / ethyl acrylate copolymers and at least one type of carbon particles selected from Ketjen black, graphite and acetylene black, or by mixing the thermoplastic resin, the carbon particles and glass fiber or carbon fiber;

obtaining a sheet material by extrusion-molding the mixture with an extruder;

forming gas flow passage grooves in a surface of the sheet material by moving press dies at the extrusion speed of the sheet material; and

obtaining the fuel cell separator by cutting the sheet material with the gas flow passages formed therein into a predetermined shape.

6. (amended) A method for manufacturing a fuel cell separator sandwiching from both sides via diffusion layers an anode and a cathode set against an electrolyte film, the method comprising the steps of:

providing polyphenylene sulfide having the viscosity of 20 to 80 psi, graphite and Ketjen black; and

obtaining a mixture by mixing 10 to 34 wt% polyphenylene sulfide, 65 to 80 wt% graphite and 1 to 10 wt% Ketjen black.

7. (amended) A method for manufacturing a fuel cell separator according to claim 6, wherein the mixture further includes 5 to 15 wt% chopped carbon fiber and the graphite included in the mixture is 60 to 80 wt%.

8.

9. (added) A method for manufacturing a fuel cell separator according to claim 5, wherein the mixture includes 14 to 20 wt% of the thermoplastic resin and 80 to 86 wt% of the carbon particles and 3 to 20wt% of the carbon particles is Ketjen black.

10. (added) A method for manufacturing a fuel cell separator according to claim 5, wherein the mixture includes 14 to 20 wt% of the thermoplastic resin, 70 to 83.5 wt% of the carbon particles and 2.5 to 10 wt% of the glass or carbon fiber.